

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 12

**UNITED STATES PATENT AND TRADEMARK OFFICE**

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

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Ex parte UWE GUNTER STOECKGEN  
and  
GERD MARXSEN

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Appeal No. 2003-0454  
Application No. 09/644,734

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ON BRIEF

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Before COHEN, STAAB, and NASE, Administrative Patent Judges.  
NASE, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1 to 7, 10 to 20 and 23 to 77, which are all of the claims pending in this application.

We REVERSE, REMAND and enter a new rejection pursuant to 37 CFR § 1.196(b).

BACKGROUND

The appellants' invention relates to chemical mechanical polishing of substrates (specification, p. 1). A copy of the claims under appeal is set forth in the appendix to the appellants' brief.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Hsu	6,200,207	Mar. 13, 2001
Miyashita et al.	6,241,581	June 5, 2001

Claims 1 to 7, 10, 12 to 20, 23, 25 to 37, 45 to 52, 54 to 63 and 65 to 75 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Miyashita.

Claims 11, 24, 38 to 44, 53, 64, 76 and 77 stand rejected under 35 U.S.C. § 103 as being unpatentable over Miyashita in view of Hsu.

Rather than reiterate the conflicting viewpoints advanced by the examiner and the appellants regarding the above-noted rejections, we make reference to the answer (Paper No. 7, mailed July 2, 2002) for the examiner's complete reasoning in support of

the rejections, and to the brief (Paper No. 6, filed May 6, 2002) and reply brief (Paper No. 8, filed September 9, 2002) for the appellants' arguments thereagainst.

### OPINION

In reaching our decision in this appeal, we have given careful consideration to the appellants' specification and claims, to the applied prior art references, and to the respective positions articulated by the appellants and the examiner. As a consequence of our review, we make the determinations which follow.

#### **Claims 1 to 7, 10 to 20 and 23 to 37**

The appellants argue (brief, pp. 7-8 and 10) that the limitation that the second conditioning surface is comprised of a material that is substantially the same as the material to be polished off the substrate as recited in independent claims 1, 16 and 29 is not taught by Miyashita. The examiner has determined (answer, pp. 3-5) that this limitation is met by Miyashita. Thus, this appeal requires us to fully understand<sup>1</sup> the scope of the terminology "substantially the same" as used in claims 1, 16 and 29.

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<sup>1</sup> Analysis of whether a claim is patentable over the prior art begins with a determination of the scope of the claim. The properly interpreted claim must then be compared with the prior art. Claim interpretation must begin with the language of the claim itself. See Smithkline Diagnostics, Inc. v. Helena Laboratories Corp., 859 F.2d 878, 882, 8 USPQ2d 1468, 1472 (Fed. Cir. 1988).

Our review of independent claims 1, 16 and 29 reveals that we are unable to derive a proper understanding of the scope and content thereof. Specifically, the terminology "substantially the same" as used in independent claims 1, 16 and 29 raises a definiteness issue under 35 U.S.C. § 112, second paragraph.

The term "substantially" is a term of degree. When a word of degree is used, such as the term "substantially" in claims 1, 16 and 29, it is necessary to determine whether the specification provides some standard for measuring that degree. See Seattle Box Company, Inc. v. Industrial Crating & Packing, Inc., 731 F.2d 818, 826, 221 USPQ 568, 573-74 (Fed. Cir. 1984).

Admittedly, the fact that some claim language, such as the term of degree mentioned supra, may not be precise, does not automatically render the claim indefinite under the second paragraph of § 112. Seattle Box, supra. Nevertheless, the need to cover what might constitute insignificant variations of an invention does not amount to a license to resort to the unbridled use of such terms without appropriate constraints to guard against the potential use of such terms as the proverbial nose of wax.<sup>2</sup>

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<sup>2</sup> See White v. Dunbar, 119 U.S. 47, 51-52 (1886) and Townsend Engineering Co. v. HiTec Co. Ltd., 829 F.2d 1086, 1089-91, 4 USPQ2d 1136, 1139-40 (Fed. Cir. 1987).

In Seattle Box, the court set forth the following requirements for terms of degree:

When a word of degree is used the district court must determine whether the patent's specification provides some standard for measuring that degree. The trial court must decide, that is, whether one of ordinary skill in the art would understand what is claimed when the claim is read in light of the specification.

In Shatterproof Glass Corp. v. Libbey-Owens Ford Co., 758 F.2d 613, 624, 225 USPQ 634, 641 (Fed. Cir. 1985), the court added:

If the claims, read in light of the specifications [sic], reasonably apprise those skilled in the art both of the utilization and scope of the invention, and if the language is as precise as the subject matter permits, the courts can demand no more.

Indeed, the fundamental purpose of a patent claim is to define the scope of protection<sup>3</sup> and hence what the claim precludes others from doing. All things considered, because a patentee has the right to exclude others from making, using and selling the invention covered by a United States letters patent, the public must be apprised of what the patent covers, so that those who approach the area circumscribed by the claims of a patent may more readily and accurately determine the boundaries of

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<sup>3</sup> See In re Vamco Machine & Tool, Inc., 752 F.2d 1564, 224 USPQ 617 (Fed. Cir. 1985).

protection in evaluating the possibility of infringement and dominance. See In re Hammack, 427 F.2d 1378, 1382, 166 USPQ 204, 208 (CCPA 1970).

In the present case, we have reviewed the appellants' disclosure to help us determine the meaning of the above-noted terminology from claims 1, 16 and 29. That review has revealed that the appellants' specification states: (1) at page 11 that "the conditioning surface of the second pad conditioner 130 may be comprised of a material that is substantially the same, or at least has the same polishing characteristics, as the material which will be polished-off or removed from the substrate," (2) at page 12 that "the second pad conditioner may be of a comb-like structure made of a material such as silicon," and (3) at page 13 that "the second conditioning surface 235 may be made of a material which is substantially identical to the one that has to be polished off the substrate, e.g., a metal, a silicon compound, etc."

However, these portions of the disclosure do not provide explicit guidelines defining the terminology "substantially the same" as used in claims 1, 16 and 29. Furthermore, there are no guidelines that would be implicit to one skilled in the art defining the term "substantially the same" as used in the terminology "wherein said second conditioning surface is comprised of a material that is substantially the same as the material to be polished off said substrate" that would enable one skilled in the art to

ascertain what is meant by "substantially the same." For example, one cannot ascertain if Miyashita's ceramic dresser 22 which comprises a ceramic made by sintering alumina, silicon nitride, silicon carbide or the like is "substantially the same" as the material to be polished off the substrates disclosed by Miyashita (e.g., a polysilicon film, a SiO<sub>2</sub> film). Absent such guidelines, we are of the opinion that a skilled person would not be able to determine the metes and bounds of the claimed invention with the precision required by the second paragraph of 35 U.S.C. § 112. See In re Hammack, supra.

Since the appellants' disclosure fails to set forth an adequate definition as to what is meant by the terminology "substantially the same" as used in claims 1, 16 and 19, the appellants have failed to particularly point out and distinctly claim the invention as required by the second paragraph of 35 U.S.C. § 112.

#### NEW GROUND OF REJECTION

Under the provisions of 37 CFR § 1.196(b), we enter the following new ground of rejection.

Independent claims 1, 16 and 29 and claims 2 to 7, 10 to 15, 17 to 20, 23 to 28 and 30 to 37 dependent thereon, are rejected under 35 U.S.C. § 112, second

paragraph, as being indefinite for failing to particularly point out and distinctly claim the invention, for the reasons explained above.

As set forth previously, our review of the specification leads us to conclude that one of ordinary skill in the art would not be able to understand the metes and bounds of the terminology "substantially the same" as used in independent claims 1, 16 and 29.

While we might speculate as to what is meant by the claim language, our uncertainty provides us with no proper basis for making the comparison between that which is claimed and the prior art as we are obliged to do. Rejections under 35 U.S.C. § 102(b) and 35 U.S.C. § 103 should not be based upon "considerable speculation as to the meaning of the terms employed and assumptions as to the scope of the claims." See In re Steele, 305 F.2d 859, 862, 134 USPQ 292, 295 (CCPA 1962). When no reasonably definite meaning can be ascribed to certain terms in a claim, the subject matter does not become anticipated or obvious, but rather the claim becomes indefinite. See In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

Accordingly, we are constrained to reverse, pro forma, the examiner's rejections of claims 1 to 7, 10, 12 to 20, 23 and 25 to 37 under 35 U.S.C. § 102(b) as being anticipated by Miyashita and claims 11 and 24 under 35 U.S.C. § 103 as being



unpatentable over Miyashita in view of Hsu. We hasten to add that this is a procedural reversal rather than one based upon the merits of the rejections.

### **Claims 38 to 44**

In the rejection of claims 38 to 44 under 35 U.S.C. § 103 as being unpatentable over Miyashita in view of Hsu (answer, p. 4), the examiner did not ascertain the differences between Miyashita and claims 38 to 44<sup>4</sup> and did not determine that anything claimed in claims 38 to 44 would have been obvious at the time the invention was made to a person of ordinary skill in the art.<sup>5</sup> The examiner did state that "[i]t is well-known in the art to commence dressing when the rate or quality of polishing has dropped below accetable [sic, acceptable] levels." However, the examiner did not rely on this well-known teaching to modify Miyashita in any way.

Based on our analysis and review of Miyashita and claim 38, it is our opinion that a difference is the limitation that "after said polishing rate reaches said predefined

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<sup>4</sup> After the scope and content of the prior art are determined, the differences between the prior art and the claims at issue are to be ascertained. Graham v. John Deere Co., 383 U.S. 1, 17-18, 148 USPQ 459, 467 (1966).

<sup>5</sup> In the rejection under 35 U.S.C. § 103, the examiner did state that Miyashita does not disclose the second conditioning surface having an area larger than the substrate and that such would have been obvious at the time the invention was made to a person of ordinary skill in the art from the teachings of Hsu. However, that limitation is not present in claims 38 to 44.

value, urging said first conditioning surface into contact with said polishing pad and providing relative movement between said first conditioning surface and said pad."

Since the examiner has not determined that it would have been obvious at the time the invention was made to a person of ordinary skill in the art to have modified Miyashita to arrive at the claimed invention, the examiner has not established a prima facie case of obviousness<sup>6</sup> with respect to claims 38 to 44. Accordingly, the decision of the examiner to reject claims 38 to 44 under 35 U.S.C. § 103 is reversed.

#### **Claims 45 to 77**

The appellants argue (brief, pp. 8 and 10) that the limitation that the second conditioning surface is comprised of a material that may be polished off more easily than the material to be polished off the substrate as recited in independent claims 45, 58 and 69 is not taught by Miyashita. The examiner has determined (answer, pp. 3-5) that this limitation is met by Miyashita.

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<sup>6</sup> In rejecting claims under 35 U.S.C. § 103, the examiner bears the initial burden of presenting a prima facie case of obviousness. See In re Rijckaert, 9 F.3d 1531, 1532, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993). A prima facie case of obviousness is established by presenting evidence that the reference teachings would appear to be sufficient for one of ordinary skill in the relevant art having the references before him to make the proposed combination or other modification. See In re Lintner, 458 F.2d 1013, 1016, 173 USPQ 560, 562 (CCPA 1972). Furthermore, the conclusion that the claimed subject matter is prima facie obvious must be supported by evidence, as shown by some objective teaching in the prior art or by knowledge generally available to one of ordinary skill in the art that would have led that individual to combine the relevant teachings of the references to arrive at the claimed invention. See In re Fine, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988).

In our view, the examiner has not established that the above-noted limitation is met by Miyashita. In that regard, the examiner has not established that the ceramic dresser (i.e., the second conditioning surface) of Miyashita is actually made of a material that may be polished off more easily than the material to be polished off the substrate.<sup>7</sup> That is the examiner has not set forth any basis as to why Miyashita's ceramic dresser made by sintering alumina, silicon nitride, silicon carbide or the like may be polished off more easily than the material to be polished off the substrates disclosed by Miyashita (e.g., a polysilicon film, a SiO<sub>2</sub> film). Absent such an analysis, the examiner has not met the burden of presenting a prima facie case of anticipation.<sup>8</sup> Moreover, while Miyashita's ceramic dresser made by sintering alumina, silicon nitride, silicon carbide or the like may be polished off more easily than the material to be

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<sup>7</sup> It is well-settled that under principles of inherency, when a reference is silent about an asserted inherent characteristic, it must be clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Continental Can Co. v. Monsanto Co., 948 F.2d 1264, 1268, 20 USPQ2d 1746, 1749 (Fed. Cir. 1991). As the court stated in In re Oelrich, 666 F.2d 578, 581, 212 USPQ 323, 326 (CCPA 1981)(quoting Hansgirk v. Kemmer, 102 F.2d 212, 214, 40 USPQ 665, 667 (CCPA 1939)):

Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing *may* result from a given set of circumstances is not sufficient. [Citations omitted.] If, however, the disclosure is sufficient to show that the natural result flowing from the operation as taught would result in the performance of the questioned function, it seems to be well settled that the disclosure should be regarded as sufficient.

<sup>8</sup> It is well settled that the burden of establishing a prima facie case of anticipation resides with the Patent and Trademark Office (PTO). See In re Piasecki, 745 F.2d 1468, 1472, 223 USPQ 785, 788 (Fed. Cir. 1984). When relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art. See Ex parte Levy, 17 USPQ2d 1461, 1464 (Bd. Patent App. & Int. 1990).

polished off substrates not disclosed by Miyashita, such a rejection, if proper, would lie under 35 U.S.C. § 103, not under 35 U.S.C. § 102.

For the reasons set forth above, the examiner has not presented a prima facie case of anticipation with respect to independent claims 45, 58 and 69. Accordingly, the decision of the examiner to reject independent claims 45, 58 and 69 and claims 46 to 52, 54 to 57, 59 to 63, 65 to 68 and 70 to 75 under 35 U.S.C. § 102(b) is reversed. Additionally, the decision of the examiner to reject dependent claims 53, 64, 76 and 77 under 35 U.S.C. § 103 is reversed since the examiner has not established the subject matter of their parent claims (i.e., claims 45, 58 and 69) would have been obvious at the time the invention was made to a person of ordinary skill in the art.

#### REMAND

We remand this application to the examiner to further consider the patentability of the claims under appeal in light of the decisions made herein. Specifically, the examiner should determine if a dresser made by sintering alumina, silicon nitride, silicon carbide or the like as taught by Miyashita can or cannot be polished off more easily than the materials to be polished off the substrates disclosed by Miyashita (e.g., a polysilicon film, a SiO<sub>2</sub> film). Based on that determination, the examiner should determine the patentability of claims 45 to 77. In addition, the examiner should

consider searching for any prior art that teaches to commence dressing when the rate or quality of polishing has dropped below acceptable levels. If such a teaching is discovered, the examiner should determine the patentability of claims 11, 24, 53, 64, 76 and 77.

### CONCLUSION

To summarize, the decision of the examiner to reject claims 1 to 7, 10, 12 to 20, 23, 25 to 37, 45 to 52, 54 to 63 and 65 to 75 under 35 U.S.C. § 102(b) is reversed and the decision of the examiner to reject claims 11, 24, 38 to 44, 53, 64, 76 and 77 under 35 U.S.C. § 103 is reversed. In addition, a new rejection of claims under 35 U.S.C. § 112, second paragraph, has been added pursuant to provisions of 37 CFR § 1.196(b). Lastly, the application has been remanded to the examiner for further consideration.

This decision contains a new ground of rejection pursuant to 37 CFR § 1.196(b). 37 CFR § 1.196(b) provides that, "[a] new ground of rejection shall not be considered final for purposes of judicial review."

37 CFR § 1.196(b) also provides that the appellants, WITHIN TWO MONTHS FROM THE DATE OF THE DECISION, must exercise one of the following two options

with respect to the new ground of rejection to avoid termination of proceedings

(§ 1.197(c)) as to the rejected claims:

(1) Submit an appropriate amendment of the claims so rejected or a showing of facts relating to the claims so rejected, or both, and have the matter reconsidered by the examiner, in which event the application will be remanded to the examiner. . . .

(2) Request that the application be reheard under § 1.197(b) by the Board of Patent Appeals and Interferences upon the same record. . . .

No time period for taking any subsequent action in connection with this appeal  
may be extended under 37 CFR § 1.136(a).

REVERSED; REMANDED; 37 CFR § 1.196(b)

IRWIN CHARLES COHEN  
Administrative Patent Judge

LAWRENCE J. STAAB  
Administrative Patent Judge

JEFFREY V. NASE  
Administrative Patent Judge

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